

SCHEDULE OF RATES

RAISE WAGES, CUT CARBON WHITE PAPER SERIES

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EXECUTIVE SUMMARY

Critics of a revenue-neutral carbon tax have claimed that the approach sacrifices environmental certainty for price certainty. Some proponents point out that the rate schedule can be designed with a particular environmental outcome in mind. Recent “cap and trade” proposals have begun to recognize the importance of price certainty by including price management tools to approximate the certainty of a tax.

The Raise Wages, Cut Carbon Act of 2009 proposes a revenue-neutral tax on carbon dioxide starting at \$15 per ton in 2010, rising 6.5% each year (adjusted for inflation) until it reaches \$100 per ton in 2040. This paper examines options for constructing a schedule of rates and compares other existing carbon tax proposals. It will be updated as expert testimony is received.

RATE OF INCREASE

Dr. Robert Shapiro conducted a study with the U.S. Climate Task Force in 2008. He used the Department of Energy’s National Energy Modeling Systems (NEMS) model, which demonstrated that a tax increasing from about \$14 in 2010 to about \$50 in 2030 would put us on track to stabilize atmospheric carbon dioxide at 450-550 parts per million. This forecast was based on applying a uniform global carbon price, so it may understate the appropriate price signal if fewer countries participate.

SHAPE OF THE TAX SCHEDULE

Compound Growth/Concave – Rate 1

Compound growth provides a time lag between the start of the price signal and significant price escalation. This time lag gives innovators time to develop and deploy efficient, reliable, least-cost low-carbon solutions before emitters feel a significant squeeze associated with carbon pricing. Compound growth also better reflects other market pricing signals, such as return on capital and investments, and inflation.

Compound growth does push significant carbon prices out along the time horizon. This would delay the introduction of expensive technologies, such as carbon capture and storage (sequestration).

Linear – Rate 2

Linear growth is a common growth curve used among carbon tax proposals. Linear growth provides a comparably more robust price signal at the start of the tax program. The aggressive rate of increase will encourage more rapid assimilation of low-carbon energy alternatives.

Beginning the program with a higher price signal may limit the amount of resources the private sector can dedicate to innovation research in the short term. It may also accelerate new technologies into the market before they have been properly evaluated and may raise the cost of technological transition.

Declining Rate of Increase/Convex Growth – Rate 3

A convex shape to the tax schedule will encourage immediate reduction in carbon-heavy activities and encourage large carbon reductions in the short term.

Such a high cost schedule at the start of the tax may overwhelm any funds that would otherwise be available to sponsor private sector research on energy alternatives. The tax schedule may inadvertently squelch economic activity in the short term rather than promote innovation.

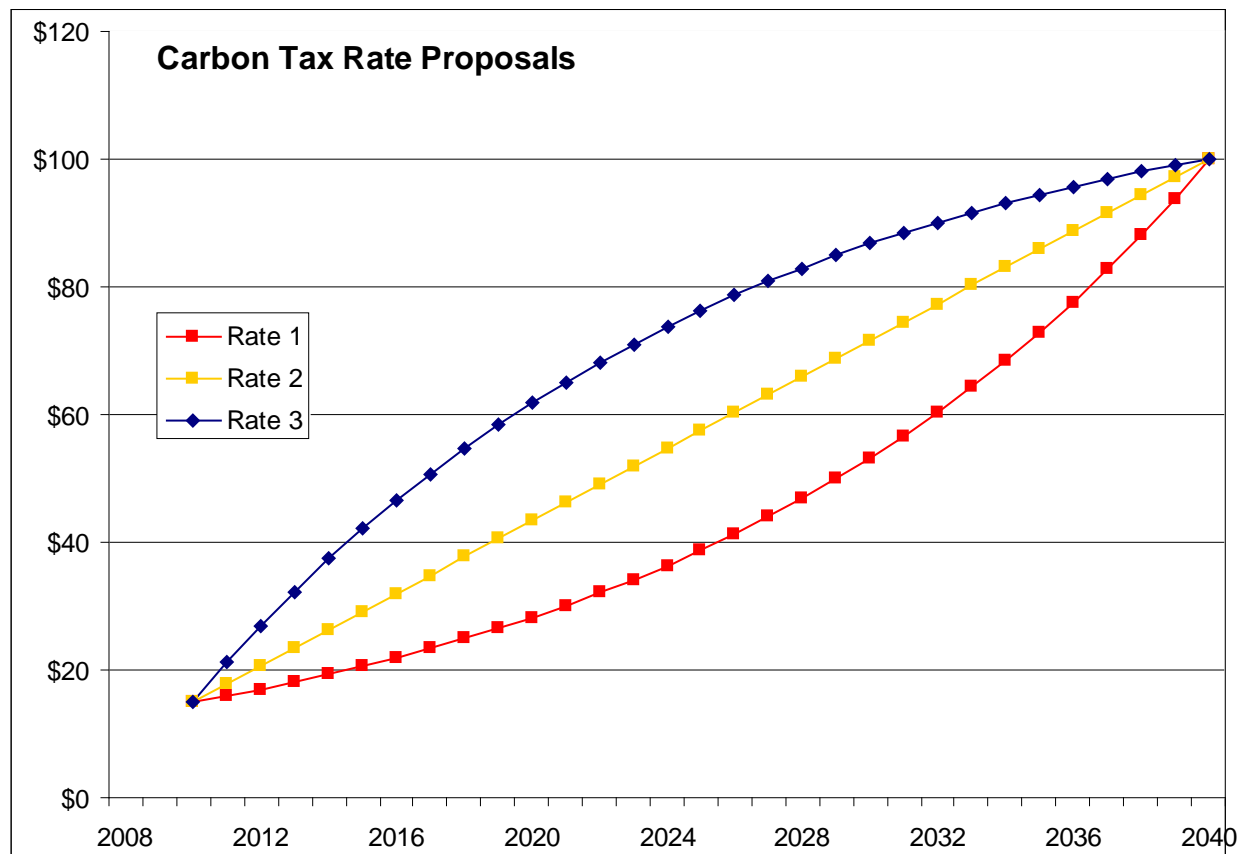


Figure 1: Shape of Tax Schedule

INFLATION ADJUSTMENT

Include Inflation

Including inflation maintains the predictability of the price signal over the term of the tax and ensures that the integrity of the price signal is not eroded by any inflationary pressure in the marketplace. This predictability is critical for all emitters, large and small, to make wise emission reduction investment decisions.

Exclude Inflation

Excluding inflation will make the carbon price less robust and harder to predict over time. High rates of inflation can also effectively create a curve with a declining rate of increase. See “Shape of the Tax Schedule” for information on the declining rate of increase.

IMPLEMENTATION IN THE RAISE WAGES, CUT CARBON ACT OF 2009

In order to create a predictable, pro-innovation tax curve that could stabilize atmospheric carbon dioxide levels between 450 and 550 parts per million, we generated an inflation-adjusted compound curve that mirrored the tax in the Shapiro/U.S. Climate Task Force study.

- Ø Including inflation maximizes the predictability of the price signal over the term of the tax.
- Ø Compound growth in the value of the tax promotes robust research in the near term.
- Ø Extending the Shapiro tax curve to 30 years should result in more substantive reduction and a more significant commitment to low-carbon energy development.

The relevant language in the bill is as follows:

“(3) APPLICABLE AMOUNT.—For purposes of paragraph (1)—

“(A) IN GENERAL.—The applicable amount for any calendar is the amount determined under the following table for such year, as adjusted under subparagraph (B):

“In the case of calendar year— The applicable amount is—

2010	\$ 15.00
2011	15.98
2012	17.02
2013	18.13
2014	19.32
2015	20.58
2016	21.92
2017	23.35
2018	24.88
2019	26.50
2020	28.23
2021	30.07
2022	32.04
2023	34.13
2024	36.36
2025	38.73
2026	41.26
2027	43.95
2028	46.82
2029	49.88
2030	53.13
2031	56.60
2032	60.30
2033	64.23
2034	68.43
2035	72.89
2036	77.65
2037	82.72
2038	88.12
2039	93.87
2040 or thereafter	100.00

“(B) INFLATION ADJUSTMENT.—

“(i) IN GENERAL.—The applicable amount contained in the table under subparagraph (A) for any calendar year after 2010 shall be increased by an amount equal to—

“(I) such applicable amount, multiplied by

“(II) the cost-of-living adjustment determined under section 1(f)(3) for such calendar year, determined by substituting ‘calendar year 2009’ for ‘calendar year 1992’ in subparagraph (B) thereof.

“(ii) ROUNDING.—Any increase determined under clause (i) shall be rounded to the nearest cent.

COMPARISON TO OTHER CARBON TAX BILLS

	STARK	LARSON (110)	LARSON (111)	INGLIS
Initial Price	\$10/ton carbon (?)	\$15/ton CO ₂	\$15/ton CO ₂	\$15/ton CO ₂
Growth Rate	\$10/year	10%/year	\$10/year	~6.5%/year
Inflation	No	Yes	No	Yes
Term of Growth	Until 20% 1990	Unspecified	Unspecified*	2010-2040
Offsets	No	Yes	Yes	No
*Nominal goal of achieving 20% below 2005 by 2050				